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CONTEXTUALIZING THE DESIGN MIND OF AN ANCIENT POTTER –
A CASE STUDY OF THE RELIGIOUS CONTEXT OF ISLAM
AND MING KENDI

FOO Check-Teck and TEO Khay-Chuan

Abstract

The design process should be of central interest to designers. Yet there is much mystery as to how the mind of a designer works in arriving at an aesthetically, innovative design. For many, the creative act is an intuitive one, springing out of the unconscious mind. Mind that brings to bear in the act of designing the influences absorbed from the environment both consciously and unconsciously. Even more interestingly, this article investigates the influences on the design mind of an ancient potter in relation to a specific object, the kendi. In the process the authors traced the historical roots to the design of water vessels. Upon the basis of available evidence, the authors then argued for Islam as the major contextual influence on the design of this variety of crescent-shaped kendi.

Introduction

One of the most intriguing aspects of research into the history of design is in unraveling contextual influences. In particular, we investigate the impacts of the environment on the design of products and thus providing a contextualized understanding of the design process. Arguably before the design for any new product may be transfigured into its physical form – now as in the past – it had to be first figured in a person’s mind. This question may then be posed:

From where does the concept for the design, especially one pleasing to the “man of taste” emerges from within the mind of the designer?

Interestingly, one of the early writers Herbert Reed on the art of designing products for consumers had attempted to answer this question as follows (Reed 1934: 38):

“...I do not think there is any doubt that the average sensitive person, the “man of taste” would find the Chinese vase superior as a work of art. And that, I believe, is because its form has an appeal which cannot be analyzed, which is not intellectual, but intuitive or unconscious...” [italics added]

In his Art and Industry, Reed was comparing a sixth century (530 B.C.) and a Chinese porcelain vase of Sung period (A.D. 960–1279). Such an aesthetic design had to be already there, at least partially, as unconsciously embedded within the mind of its
designer. For our case study of the Ming blue-and-white porcelain (kendi) it too had to
appear as "thoughts" inside the mind of one or several ancient Chinese potters.

Our argument is that the influences of aesthetically pleasing design of products, espe-
cially those intended for religious purposes often embed within its form, some beliefs,
values and practices of the particular religion. The design reflecting, say, those religious
ethos, norms or symbols often unconsciously absorbed by the maker as part of the
process in conceptualizing the product. In our example, we argue for the ancient potter
to be most likely, a follower of the Islamic faith.

As far as the literature on the mind or the thinking of the designer is concerned,
Lawson in *How Designers Think* (Lawson 1980: 131–147) had reviewed an interesting
typology. The thinking types explored in relation to mind of the designer included inter
alia behaviorism, the Gestalt school with its problem-solving orientation, the cognitive
science paradigm and others including emphasizing convergence and divergence in the
design thinking processes. Yet after having had devoted extensive efforts in deciphering
the nature of the process, Lawson concluded:

"Even now after some thirty years of working on design research, I realize that there is much
I know about design from practicing the process rather than studying it. Perhaps this remains
not only the greatest single failing but also the inherent fascination of the field. We have still
not fully explained that most magical of all conjuring tricks, the design process." [Italics
added]

The first author of this article too is under the same magical spell in seeking to under-
stand the process in design. A process of embedding in the mind of the potter, cultural,
religiously inspired concepts. In this case study the authors are investigating as deeply
and specifically as possible all the detailed aspects in the design of a specific object. This
is done as part of research in identifying critically important contextual influences that
may be acting on the designing mind of the ancient Chinese potter in his exercising his
craft in manufacturing these kendis.

What makes this search exciting is that our historical research revealed these kinds of
objects to originate from India but used by a different religious order – Buddhism. The
purposes of these objects remained however very much the same – the same religious
purpose of ablution through water. Thus any changes in design are not due to changes
for functional reasons.

Speaking experimentally we had instituted a control of a critical variable influencing
design considerations – the functional considerations of a product. We anticipate, bor-
rowing the words of Sparke for religion to be the primary "outside force" and of the
object "manifesting" within its "context". Sparke (1986: xiii) had already put it so ele-
gantly in *Design and Culture*:

"...as a cultural concept design is determined by the outside forces that have shaped it and by
the contexts within which it has manifested itself...." [Italics added]

Thus we argue here for *kendi* to be cited as the classic example, following Sparke of a
design that as resulting from culturally, (religiously so, Islamic) concepts. Or as a restate-
ment: a product that is in its conceptualization of design largely determined by *outside forces* but *manifesting* within its religious (Islamic) contexts. We turn to discuss religions as contexts as applied to our case study of the *kendi*.

**Historical contexts of religion**

Two major foreign religions that made inroads into early China are Buddhism and later Islam. Of the two Buddhism was earlier in making impacts on the Chinese consciousness or from the design mind perspectives, the unconscious through absorbing of the values, beliefs and practices of Buddhism. Some scholars had even suggested Buddhism to be introduced into China as far back as during the First Emperor of China, Qin Shi Huang. The longer the time the deeper and more entangled are the roots of religious influences.

The impacts of Buddhism on Chinese arts are well documented but relatively little is available on the impact of Islam on Chinese arts. Even though Islam was introduced much later yet the religion had an inherent, externally oriented dynamism. Thus by Sung, Muslims were handling external affairs of the country. Within the realm of arts and design, Islamic motifs began to trickle into pottery. Indeed Chinese potters began adopting Islamic motifs especially during the Ming dynasty period with the production of globally renowned blue-and-white ceramics for overseas and homeland markets.

Here we document by way of a detailed case study how Islam had radically transformed the design of a water vessel. It was introduced into China by Indian Buddhist monks for ablation during religious ceremonies. The design transformation was so evidently, so radical even dramatic that the impacts of external, *outside forces* had to be great. As shall be seen, key religious motifs were in the process incorporated into the design. It is thus meaningful for us as scholars to argue on the design roots for this specific breed of Ming blue-and-white ceramics: crescent-shaped, minaret-necked *kendis*.

In so doing we may better grasp the role of contextual forces such as the religion of Islam in shaping the art of designing or conceptualizing pottery or other related products. Through this process of exploration, we delve deeply into the mind of the Muslim Chinese potter as he took conceptually, motifs, shapes and forms as related to his own religious beliefs.

Most interestingly as in this case, the Muslim potter thereby achieved breakthroughs in terms of realizing a powerfully aesthetic design. As shall be seen, the end results of the religiously inspired design besides being highly innovative was at the same time, religiously, deeply meaningful. Next we explore the historical context of the Muslim Chinese potters.

**Historical context of Islam**

The golden age of Islam in China is during the Ming Dynasty (A.D. 1368–1644). Earlier, in the preceding Sung period, as mentioned earlier the Muslims were already
well recognized by the Imperial Chinese authorities for the wide scope of their international contacts. Such recognition may be seen in the appointments made by the Imperial House. Muslims were appointed to leading positions, as high as the Director-General when China had dealings with external, overseas trading partners. Chinese worldview then was of their country as being at the center of the world and unsurprisingly they by themselves were not outwardly, globally oriented.

Another indicator of the high esteem enjoyed by the Muslims for their worldliness: Emperor Yongle chose the more outwardly oriented Muslim Admiral to lead an impressively huge Chinese fleet on naval expeditions, crossing seas and oceans to reach out to and explore the globe. This decision by Emperor Yongle was of some significance for he had been known historically to maintain personal ties with several ancient Middle Eastern states such as Samarkand. He is thus the key to the origins of the design of our crescent-shaped *kendi* (see for instance Khoo 1991: 9) (Figure 2).

Now, in order to facilitate better communication and understanding with distant Muslim states, Emperor Yongle had to maintain within the city of Nanjing, a rather sizeable academy of Muslim language scholars. Aesthetic tastes, such as in choices of the colors, motifs or shapes had in China been influenced by the leading scholars of the day. Thus one plausible, if not perhaps the main source of influences on the design on any new, Islamic inspired ceramic art ought to also flow from these Muslim, Imperial Academy scholars. And in particular for this chosen piece as case study, the design is austere, elegant and yet highly innovative. Furthermore as shall be seen in detailed discussion that follows, the artifact is so rich in Islamic symbolism.

Contextually, on common knowledge of the era, by the time of Ming rule, the integration of Muslims into the Chinese Han society was more or less complete. As may be expected, Chinese potters whether themselves Muslim or not, began to borrow shapes, designs and motifs from Islam for designing their ceramics especially if these pieces were made for the growing overseas clientele. By then too, the famed *Fin De Zhen* in Jiangxi province had already begun life as a center for ceramic production.

Also at about the same time, Muslims began to adopt Han names and even some of their customs. Customs are not in conflict or inconsistent with beliefs of Islam. However the Muslims must have retained the Islamic mode of dressing, one similar to what they are now dressed in. They must also be keeping to a strictly Islamic diet, for example, no pork. For the artifact to be detailed, we hypothesized the crescent *kendi* to be capturing and reflecting the aesthetics in design of this period in China – or at least, the preferences among leading Muslims within the community. For during this period, Islam was near or reaching its peak under Imperial favor.

**Technological context**

During the same Ming period, there was the intense and wide application by the Chinese potters of cobalt blue (cobalt-oxide pigment and also riches in iron oxide). Color in the case of ceramics is a critical design choice. An ingredient pivotal to the potter for
realizing on porcelain what is now known as the world famous Ming blue-and-white under-glaze porcelain).

Despite its fame, it is still not as yet abundantly clear why this phenomenon blossomed only during Ming. Here we speculate on possibilities. For in terms of the availability of chemical technology, cobalt oxide had long been imported by the Chinese – albeit in small quantities – from as early as the beginning of Tang dynasty. Yet despite the luxuriant tastes of the Tang Han Chinese for colors, blue-and-white was not one of their favorites.

It was the Mongols of the Yuan Dynasty (A.D. 1271–1368) who were the first to import cobalt blue in large quantities from the Near East (cf. northern Iraq). This may be attributable to the widely held religious worship and beliefs of the Mongols in the Sky God – hence blue – as their heavenly protector. Contextually, it is likely the abundance availability of this critical resource that triggered the later, wider commercial exploitation of this color as the key design element of Ming blue-and-white, under-glaze ceramics.

Aesthetically pleasing, this must be one of the key design factors why many of these pieces were so sought after including connoisseurs from the Islamic world. Chinese under-glaze blue-and-white (as exemplified by Ming pieces) is argued by many to be China's greatest contribution to the art of ceramic. Pieces emerging out of China in the 14th–15th century made wide impacts globally across different cultures.

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**Figure 1. Underlying conceptual model.**
On the technical side, to produce the blue-and-white, under-glaze porcelain, the Chinese potter first potted the body by applying white kaolin mixed with feldspar. After body is preheated to 900–1000°C, the enriched cobalt oxide treatment is then applied. Before firing at 1325°C in an oxidizing environment, a transparent, alkaline glaze was applied. Besides prototypes of Chinese origin, kilns like Jin De Zhen produced many Islamic influenced models. Of the available pieces, we selected one that in our opinion best capture and illustrate the transformation in design concepts due to Islam.

The case study: *kendi*

Our methodological approach may be conceptualized more generically as shown diagrammatically (Figure 1). Our focus is on the contrasting design features between two artifacts, object A as the originating piece and object B, the subsequent development. Most importantly, the functional purposes of these two objects had to the same. In our case, the function is as vessel for water to be used for ablution. Though less essential to our methodology, is in the similarity of the material that the objects were made (clay).

![Figure 2. Crescent-shaped, minaret-necked *Kendi* decorated with flying phoenixes.](image-url)
Our focus is on object (B): a Chinese Ming blue-and-white, crescent-shaped kendi (early 15th century; see Figure 2) with a minaret-like, tabular neck and a minuscule, onion-shaped spout is utilized here as our case study of Islamic influences on design. The kendi stands on four short legs and decorated interestingly with motifs. Kendi, a vessel for water used for purification purposes originated from the Indian kundika or kundi (object A as per our methodology) in Sanskrit (Wu 2002: 28). Indian Buddhist monks used the kundi for religious purposes as in the carrying water for cleansing. The design of the kendi in the shape as it stands, suggests the design to be one highly evolved from the original version.

The Collection of Dr and Mrs Foo

Ming dynasty, 16th Century,
Jing De Zhen ware, porcelain painted in under-glaze blue
Height 19 cm, Length 22.5 cm and Diameter 11 cm
Collection of Dr and Mrs CT Foo

Most interestingly this piece is a classic example of the fusion of Islamic ideals with the high art and advanced technology of Chinese ceramic making. The artifact reflects major Islamic symbolism of the crescent and the star and the minarets of a mosque. Overall, the shape of the kendi is that of a crescent moon. The stars sparkle as painted motifs just below the dome, at the top of the neck, what may also be described as the “blue-on-white diamond pattern”. The shape of the centrally situated, dome minaret reminds the faithful of the call to prayers. Indeed, the twin ends of the crescent are conical in shape, again reflecting popular, alternative designs of minarets.

At the bottom are the motifs of sea waves perhaps reminiscent of the period of the seven great expeditions (A.D. 1405–1433) by Muslim Chinese Eunuch Admiral Cheng Ho. His father, a Muslim had done his pilgrimage to Mecca and thus Cheng Ho was more externally exposed than the average Chinese. His expeditions had brought about even further fusion of ideas from the overseas that influenced the Chinese arts. The Chinese fleet visited Muslim states including Malaysia and Sumatra among others. According to Menzies (2003), Cheng Ho had in fact sailed round the world and had reached the Antarctica.

The motifs of similar flying phoenixes in pair are typically seen during the reign of Emperor Yung-le (A.D. 1403–1425). For an example, it is in the use of a pair of phoenixes where a stem-cup is decorated utilizing the same concepts (Macintosh 1994: 36). The phoenixes are painted exquisitely as these Imperial birds appear to be alert with their wings spread out as though still in flight. Arguably such motifs of flying phoenixes further reinforce the idea of exploration and travel under Emperor Yung-le.
phoenixes were flying amidst rolling scrolls of lotus and looping, tender stems with trefoil leaves and leaf-buds. Such arabesque, spiraling of plant/flower/leaf/bud motifs is very much consistent with Muslim design preferences.

All these factors render this a valuable if not rare piece of Islamic influenced artifact from the hands of the famed Ming Chinese potters of the blue-and-white. The motifs of phoenixes clearly suggest this artifact to have been intended more for the upper, wealthier class of Muslims residing within cities of China with strong Islamic presence. The approach undertaken here is consistent with what Medley (Medley 1986: 178) had advocated as follows:

"...Both the motifs and the manner of painting provide valuable keys for dating the vast quantity of 14th Century output which was intended primarily for the Islamic market..."

Next we discuss on religious influences.

**How Islam transforms design**

To be more specific, these elements were being transformed as a result of Islamic influences. As to the *speed, quantities and perceived quality* of this religious transformation in the design of porcelain wares to being Islamic may be discerned from Vainker (1991) who remarked as follows:

"...Islamic tradition quickly revealed itself in the Jingdezhen wares..." [p. 139]
"...China was producing large quantities of blue-and-white porcelain in Islamic shapes..." [p. 142]
"...Gong Zhen and Fei Xian accounts of the voyages with Zheng He a Muslim contained remarks of the high esteem Jingdezhen blue-and-white wares were held in foreign country..."

For as mentioned earlier, one of the earliest designs of water vessels used for ablution as it is known in Chinese, *Sui-hu* was from the earlier Indian *kundi*. This is depicted summarily in Figure 3 and each element shall be discussed in detail.

(1) **Neck**

The hypothesis here is the designer had borrowed the concept of minaret and utilized it in the shaping of the neck of the *kendi*. The minaret-like neck is given the central position of the artifact. This is particularly significant for Muslims as the mosque (as symbolized by the minaret) remains so central to their daily lives.

(2) **Spout**

In the case of the Indian originated *kundi*, the spout is in the shape of a cup-like, garlic head. Whilst the origins in the design of *kundi* are outside the scope of this paper, we may briefly theorize it to flow from an earlier religious practice. That is of using small cups to hold water for ablution. Instead of a cup, there is here instead a small, almost garlic-like shape spout for the *kendi* (see the photograph for a detailed view). Like the
kundi however, the spout of the kendi stayed on the side and at somewhere, mid-way in its height.

(3) Body
This is the most dramatic transformation due to Islam in terms of overall design concepts. Here arguably the Chinese potters were attempting to capture the shape of the crescent moon. One alternative explanation for the resulting design is that the resemblance to the horns of a bull. It is an animal then frequently encountered in the fields of South East Asia then. Whilst this explanation is plausible, it fails to account for these other observations:

(a) Towards the ends of the crescent, they are indeed ringed and conical in shape. Indeed, as already documented, these blue-and-white (see for example, Yeo and Martin; 1978, p. 110), these early Ming kendis are later capped and decorated with
silver caps. These decorations are suggestive that the potters, working probably under the influences of Muslim scholars were trying to reinforce the resemblance of these to the towers. For towers were often seen along with the central minaret inside the compounds of the typical Mosque.

(b) The width between the two tips of the crescent is much too close for them to be representing the horn of a bull. Also the body of this particular piece is much too broad and resembles rather more the moon. Perhaps the very whiteness of the porcelain had reinforced the imagination of the potter into one of conceptualizing the crescent moon as a motif.

The only argument favoring the concept of the horn of the bull is in its four legs. Their presence suggests the remote possibility of these being legs of an animal.

(4) Legs
Instead of a foot rim in the case of kundi, the kendi had four short but stout standing legs. Even more interestingly, each of these had been decorated with curled motifs. What is the motivating factor behind incorporating legs as part of its design? Maybe, the potter simply wanted to bring out by lifting off the ground, the aesthetics of the underlying line of the curve of a crescent moon.

(5) Motifs
Finally, in sharp contrast with concept of emptiness (a Buddhist concept) as suggested by a plain white surface of the kundi, the Islamic kendi is richly decorated by motifs. These were painted with vibrant blue on the pleasing, white porcelain.

From our detailed case-study we now present a generic model on a process for investigating contextual influences on the mind of a designer.

A generic model
Theoretically, the design of an artifact may be influenced or constrained by contextual factors (see Figure 4) of religious, societal, technological and other origins. Thus a root object may be transformed in its design as a result of the designer or teams of designers who operated with these contexts. Our work explores the contextualizing of design. In our discussion, possible roles are highlighted – societal, cultural norms (color, Tang versus Ming), leadership (Emperor YongLe), religious beliefs (motifs), technology, resource abundance (enriched cobalt oxide mineral). Yet there are very few studies that provide insights on contextual influences using specific, representative artifacts. As illustrated through our case study, such a strategy may illuminate on the plausible origins of design concepts from the East.
This case study is intriguing for the design seemed to have originated from India, then absorbed into China along with the spread of Buddhism. Later, whilst the functional use of the water vessel remained unchanged, it was transformed by Islam into a radically innovative. Even more interesting, such a make of crescent-shaped *kendi* (for another representative piece within China, see note [12]), then flowed out of China into South East Asia, the Middle East and back again into Muslim regions of India. As observed by Horey (1945: 13):

"The exportation of porcelain from China never ceased throughout the whole of Ming period, rising to a flood in the middle of the 15th century and again from the middle of the 16th century onwards."

In the process, they were creating an evolutionary flow of design ideas for water vessels (ablution) over the centuries.

Now with the rise of China economically with strong manufacturing capabilities, we may yet be to trace yet another torrent of design ideas in the exports of Chinese manufactures. This time it is more likely to embed design ideas absorbed unconsciously from the West.
Notes

1. According to Khoo (1991: page 8), such early period Ming (15th to 16th centuries) Kendi with crescent-shaped body with tabular neck and tiny spout may have been made for the Islamic areas of the Malay-Indonesian Archipelago.

2. See plate 28 for a similar though smaller piece. It had been attributed to early Ming dynasty, (length 19 cms) but differently decorated. The metal spout, metal lid and metal covers on the piece were as explained by the authors to be later additions. According to the authors the piece as displayed was intended for the Muslim market.

3. A similar though later 17th Century Ming piece (H18 cm) although different motifs on the body (floral motifs) is featured in a recent 1998, Chinese publication (ISBN 7-80609-745-7) on page 204.

References